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What is claimed is:

1. A light spot position sensor, comprising:
a substrate; and
a plurality of photosensitive devices arrayed at a certain
5 pitch, formed with semiconductor layers deposited on said
substrate, and isolated from each other.

2. The light spot position sensor according to claim
1, wherein said plurality of photosensitive devices configures
10 a photosensitive device array arranged one-dimensionally.

3. The light spot position sensor according to claim
1, wherein said plurality of photosensitive devices includes
a first photosensitive device array arranged on said
15 substrate along a first axis; and
a second photosensitive device array arranged on said first
photosensitive device array with an interlayer insulator
therebetween, along a second axis different from said first axis.

20 4. The light spot position sensor according to claim
1, further comprising a scanning detector for sequentially
scanning output signals from said plurality of photosensitive
devices to detect a light spot position.

25 5. The light spot position sensor according to claim
1, further comprising:

an output signal line commonly connected to terminal
electrodes of said plurality of photosensitive devices; and

30 a detection circuit connected to said output signal line,
wherein a light spot is radiated as a light pulse to determine
a light spot position from a delay time of a detection output

from said detection circuit after said light pulse irradiation.

6. A displacement measuring device, comprising:
a scale having scale markings formed along a measurement
5 axis;

a sensor head movably arranged relative to said scale along
said measurement axis for reading said scale markings; and
a state detection system mounted on said sensor head for
optically detecting a relative positional state of said sensor
10 head to said scale, wherein said state detection system contains
a light spot position sensor including

a substrate; and

a plurality of photosensitive devices arrayed at
a certain pitch, formed with semiconductor layers
15 deposited on said substrate, and isolated from each other.

7. The displacement measuring device according to
claim 6, wherein said plurality of photosensitive devices
configures a photosensitive device array arranged
20 one-dimensionally.

8. The displacement measuring device according to
claim 6, wherein said plurality of photosensitive devices
includes

25 a first photosensitive device array arranged on said
substrate along a first axis; and

a second photosensitive device array arranged on said first
photosensitive device array with an interlayer insulator
therebetween, along a second axis different from said first axis.

30 9. The displacement measuring device according to

claim 6, further comprising a scanning detector for sequentially scanning output signals from said plurality of photosensitive devices to detect a light spot position.

5 10. The displacement measuring device according to claim 6, further comprising:

 an output signal line commonly connected to terminal electrodes of said plurality of photosensitive devices; and

 a detection circuit connected to said output signal line, wherein a light spot is radiated as a light pulse to determine a light spot position from a delay time of a detection output from said detection circuit after said light pulse irradiation.

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a cantilever arranged opposite to a work to be measured and movable along a surface of said work without contacting said work;

5 a light spot position sensor mounted on the tip of said cantilever; and

a light source mounted on the tip of said cantilever for providing a light beam entering said light spot position sensor via said work, said light spot position sensor including

a substrate; and

10 a plurality of photosensitive devices arrayed at a certain pitch, formed with semiconductor layers deposited on said substrate, and isolated from each other.

15 15. The displacement measuring device according to claim 14, wherein said plurality of photosensitive devices configures a photosensitive device array arranged one-dimensionally.

20 16. The displacement measuring device according to claim 14, wherein said plurality of photosensitive devices includes

a first photosensitive device array arranged on said substrate along a first axis; and

25 a second photosensitive device array arranged on said first photosensitive device array with an interlayer insulator therebetween, along a second axis different from said first axis.

30 17. The displacement measuring device according to claim 14, further comprising a scanning detector for sequentially scanning output signals from said plurality of photosensitive devices to detect a light spot position.

18. The displacement measuring device according to claim 14, further comprising:

5 an output signal line commonly connected to terminal electrodes of said plurality of photosensitive devices; and

a detection circuit connected to said output signal line, wherein a light spot is radiated as a light pulse to determine a light spot position from a delay time of a detection output from said detection circuit after said light pulse irradiation.

10 19. The displacement measuring device according to claim 14, further comprising a detection means for detecting a surface feature of said work based on a position of said light beam detected at said light spot position sensor, said light beam output from said light source and entering said light spot position sensor via said work.

15 20. The displacement measuring device according to claim 14, further comprising:

20 a displacement device arranged on said cantilever for displacing the tip of said cantilever in the direction opposite to said work;

25 a displacement control means for feedback controlling said displacement device so that a position of said light beam detected at said light spot position sensor always comes to a constant position, said light beam output from said light source and entering said light spot position sensor via said work; and

30 a detection means for detecting a surface feature of said work based on a feedback signal from said displacement control means to said displacement device.

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a detection means for detecting a surface feature of said work based on a feedback signal from said displacement control means to said displacement device.